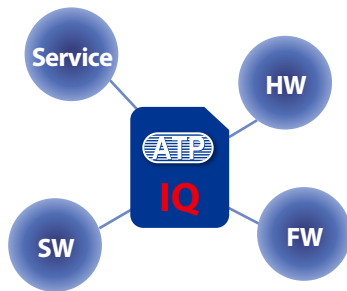




ATP Electronics, Inc.

# Industrial Grade Quality

## ATP SLC SD/microSD Solutions



**Industrial Applications** have a sustained requirement for long term reliability and consistent performance.

**ATP's Industrial Grade SD/microSD** cards have undergone extensive validation and mass production level test processes. In addition, they come with a wide range of purpose-built features that guarantee reliability, durability, data integrity, and better TCO under extreme environmental conditions.

### ■ Joint Validation - Software Integration

```

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Speed Class:           Class 10
UHS Speed Grade:      U1
Spare Block Count:    136
Run-time Bad Block Count: 0
SPOR Failure Count:  0
Min Erase Count:      0
Max Erase Count:      1
Total Erase Count:    10
Average Erase Count:  0
  
```



#### One Vendor Command – Simple & Straightforward

Without compiling the kernel and affecting system stability, one single vendor command can acquire SD/microSD information for engineering inspection reference without interrupting the host operation.

#### SD Life Monitor – More & Customized

ATP SD Life Monitor, an early warning tool to detect wear out/ spare block exhaustion, activates real-time health check and provides storage identification information at a glance. When installed in customer's host device and test program, the tool can simulate product life time under the application environment.

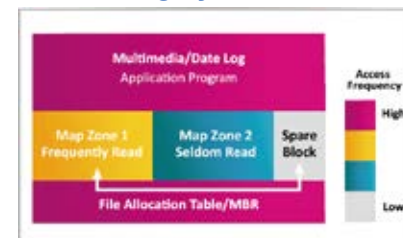
### ■ Advanced Sudden-Power-Off-Recovery (SPOR)



#### ATP's SPOR (Sudden-Power-Off-Recovery)

firmware mechanism has been verified by stringent internal power cycling tests and assures data integrity and reliable operation even in supply voltage fluctuations and frequent power losses.

### ■ Data Integrity



#### AutoRefresh – Read Disturb Protector

ATP AutoRefresh can drastically reduce the risk of data loss in read-centric applications as the feature automatically checks the ECC in every read operation and, if required, moves data to good blocks before any failure occurs. ATP AutoRefresh is best suited for read intensive applications such as boot-up and IVI (In-vehicle infotainment).

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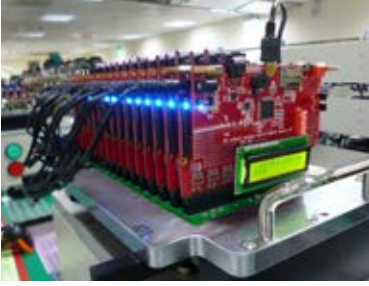
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## Reliability - 100% Mass Production Test



### Memory Card Testing Capability

ATP's mass production test process sorts out potential manufacturing or component level defects. This guarantees industry leading quality levels without visible impact on lead times. ATP's testing capability includes:

- Efficient & scalable testing equipment
- ATP developed testing equipment and testing script
- Lot tracking/recording

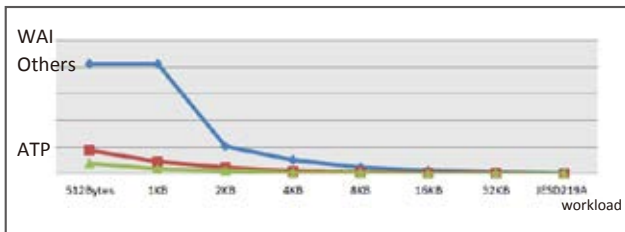
## System-in-Package (SiP) – Waterproof and Dustproof



### IP 57/67 – Waterproof and Dustproof

ATP's System-in-Package (SiP) fully encapsulates all exposed components and points of failure to protect against water(IPX7)/humidity, dust(IP5X/IP6X), electrostatic discharge, shock/vibration, and extreme temperatures.

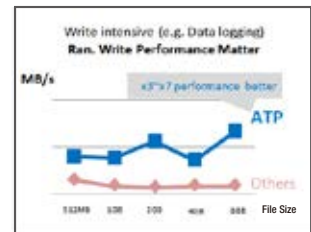
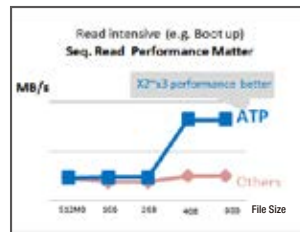
## Write Amplification Index (WAI)



### Write Optimization for Write-Intensive Applications

Writing small-file data (e.g. log files) can significantly impact the WAI and result in reductions of endurance and performance. ATP's FW algorithm is optimized for such write patterns and significantly reduces wear amplification and prolongs the card's lifetime.

## Industry Application / Usage



### Read/Write-intensive applications in real use cases:

Automotive, Healthcare, Automation, Military/ Aerospace/ Avionics, Testing & Measurement.

## Product Spec

Product Name	SD/SDHC	microSD/microSDHC
Flash Type	SLC	
Density	512MB to 8GB	
Performance	Sequential Read up to 69 MB/s	Sequential Read up to 82 MB/s
	Sequential Write up to 38 MB/s	Sequential Write up to 39 MB/s
Interface	<b>High Speed Mode</b> Class 6 (512MB to 8GB)	<b>Ultra High Speed Mode</b> UHS-I, U1 (4GB to 8GB)
Operating Temperature	-40°C to 85°C	
Storage Temperature	-55°C to 90°C	
Reliability	Advanced Static/Dynamic Wear-Leveling/ AutoRefresh	
	TBW*(max.) : 192 TB	
	MTBF@25C: >5,000,000 hours	
	Number of Insertions: 10,000 minimum	
Dimensions: LxWxH (mm)	32.0 x 24.0 x 2.1	15.0 x 11.0 x 1.0

## Learn More

Work with your ATP representative, distributors, or contact us at [www.atpinc.com](http://www.atpinc.com) to learn more

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